

REMARKS

Claims 1-8, as amended, remain herein. Claims 9 and 10 remain herein but are presently withdrawn from consideration.

Claim 1 has been amended to recite "said forward support seat comprises a profile for causing separation of said at least two segments from the sabot upon exiting a barrel." See applicants' specification, page 5, lines 19-20 and page 7, lines 18-21. Minor, editorial changes have been made in claims 1-8.

1. The finality of the restriction requirement is acknowledged. Each of claims 1-8 claims an elected species.

2. Claims 1-8 were rejected under 35 U.S.C. §112, second paragraph. Claims 1-8 have been reworded, thereby mooting the rejection. Reconsideration and withdrawal of the rejection are respectfully requested.

3. Claims 1-4 were rejected under 35 U.S.C. §102(b) over Clarke et al. U.S. Patent 4,802,415.

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The presently claimed sub-caliber projectile includes a sub-caliber penetrator dimensioned to have a caliber less than a caliber of a barrel for firing such penetrator, the penetrator having a lengthwise central axis, a sabot dimensioned to have a caliber substantially equal to the barrel caliber, including at least two segments and surrounding the sub-caliber penetrator, wherein the sabot includes at least three support seats having the barrel caliber and including a forward support seat, a median support seat and a rear support seat spaced from one another along the lengthwise central axis, and wherein the forward support seat includes a profile for causing separation of the at least two segments from the sabot upon exiting a barrel. This arrangement is nowhere disclosed or suggested in the cited reference.

The Office Action cites Clarke et al. '415 as allegedly disclosing a segmented sabot having three axially spaced support seats including element 38 in the rear, band 36 in the middle, and element 50 in a forward location. Contrary to those characterizations Clarke et al. '415 in fact discloses telescoped ammunition 10 calibered at the outer diameter of

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outer case 40 to fit a gun barrel, ammunition 10 including charges 15 and 16, sub-caliber projectile 30, sabot 35, control tube 20 and booster charge 25. Clarke et al. '415, column 5, lines 6-9 and 15-19, discloses sabot 35 having rear part 38 being a piston 38 calibered to the inner diameter of control tube 20 (not the gun barrel), for driving sabot 35 when booster charge 25 is ignited. Thus, piston 38 is sub-calibered, i.e., it has a caliber less than the barrel caliber. Piston 38 resides at the rear of control tube 20 and has the caliber of the inner caliber of control tube 20, and elements 36 and 50 have the caliber of the inner diameter of the axial cavity of forward propellant 16. Thus, elements 38, 36 and 50 are sub-calibered, and none of them are support seats of sabot 35 having gun barrel caliber. Accordingly, Clarke et al. '415 does not disclose three support seats, as recited in applicants' claim 1.

For the foregoing reasons, Clarke et al. '415 fails to disclose all elements of applicants' claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in Clarke et al. '415 that would have suggested the desirability of modifying any portions

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thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2-4, which depend from claim 1, are allowable for the same reasons explained herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

4. Claims 1-8 were rejected under 35 U.S.C. §102(b) over Klumpp German Patent DE 003843504.

The presently claimed sub-caliber projectile includes a sabot dimensioned to have a caliber substantially equal to the caliber of a barrel for firing a penetrator, as described herein. This arrangement is nowhere disclosed or suggested in the cited reference.

The Office Action cites Klumpp DE '504 as allegedly disclosing three axially spaced support seats including bands 12, 9 and 11. But, in fact, Klumpp DE '504 discloses an ammunition that necessarily includes both a front sub-caliber penetrator 21 and a rear sub-caliber penetrator 22, the two sub-caliber penetrators supported by two segmented sabots 1 and 2. In contrast, the presently claimed invention is ammunition is a

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single sub-caliber penetrator surrounded by a single, barrel caliber sabot having at least two segments.

Klumpp's front portion penetrator includes first sabot 1 surrounding first penetrator 21 and has only one calibered support seat 11, contrary to applicants' claim 1.

Klumpp's rear portion penetrator 22 does not include a forward support seat having a profile for causing separation of at least two segments from the sabot upon exiting a barrel, as required by applicants' claim 1. Also, the rear portion includes second sabot 2 surrounding second penetrator 22 and has only two calibered support seats 9 and 12, again contrary to applicants' claim 1.

Accordingly, Klumpp DE '504 does not disclose a projectile including a sub-caliber penetrator including (1) a single barrel caliber sabot, the sabot including at least two segments and surrounding the sub-caliber penetrator, and (2) at least three support seats dimensioned to barrel caliber, wherein (3) a forward one of the three seats has a profile for causing separation of the segments from the sabot upon exiting a barrel, as recited in applicants' claim 1.

For the foregoing reasons, Klumpp DE '504 fails to disclose all elements of applicants' claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in Klumpp DE '504 that would have suggested the desirability of modifying any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2-8, which depend from claim 1, are allowable for the same reasons explained herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

5. Claims 1-8 were rejected under 35 U.S.C. §103(a) over Bisping et al. U.S. Patent 4,524,695, in view of either Klumpp DE '504 or Clarke et al. '415.

The Office Action admits that Bisping et al. '695 does not disclose a third forward support seat, and cites Klumpp DE '504 or Clarke et al. '415 as allegedly teaching same.

But, Bisping et al. '695 also does not disclose an ammunition having a sub-caliber penetrator including (1) a barrel caliber sabot including at least two segments and

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surrounding the sub-calibered penetrator, and (2) at least three barrel caliber support seats, wherein (3) a forward one of the support seats has a profile for causing separation of the segments from the sabot upon exiting a barrel, as recited in applicants' claim 1.

Klumpp DE '504 does not teach or suggest ammunition including a single sabot having three, barrel caliber support seats and surrounding a single penetrator, wherein a forward one of the three seats has a profile for causing separation of the segments from the sabot upon exiting a barrel. Also, Klumpp DE '504 does not teach or suggest that it would be beneficial or desirable to have a single penetrator surrounded by a single sabot having three seats, one of which has such a profile.

Clarke et al. '415 does not disclose three barrel caliber support seats, as explained herein, nor does Clarke et al. '415 teach or suggest that it would be beneficial or desirable to have three seats.

Accordingly neither Klumpp DE '504 or Clarke et al. '415 discloses anything which would have the deficiencies of Bisping et al. '695 explained herein.

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For the foregoing reasons, none of Bisping et al. '695, Klumpp DE '504 or Clarke et al. '415 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in any of these references that would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Claims 2-8, which depend from claim 1, are allowable for the same reasons explained herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

All claims 1-8 are now proper in form and patentably distinguished over all grounds of rejection stated in the Office Action. Accordingly, allowance of all claims 1-8 is respectfully requested.

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Should the Examiner deem that any further action by the applicants would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representatives.

Respectfully submitted,

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